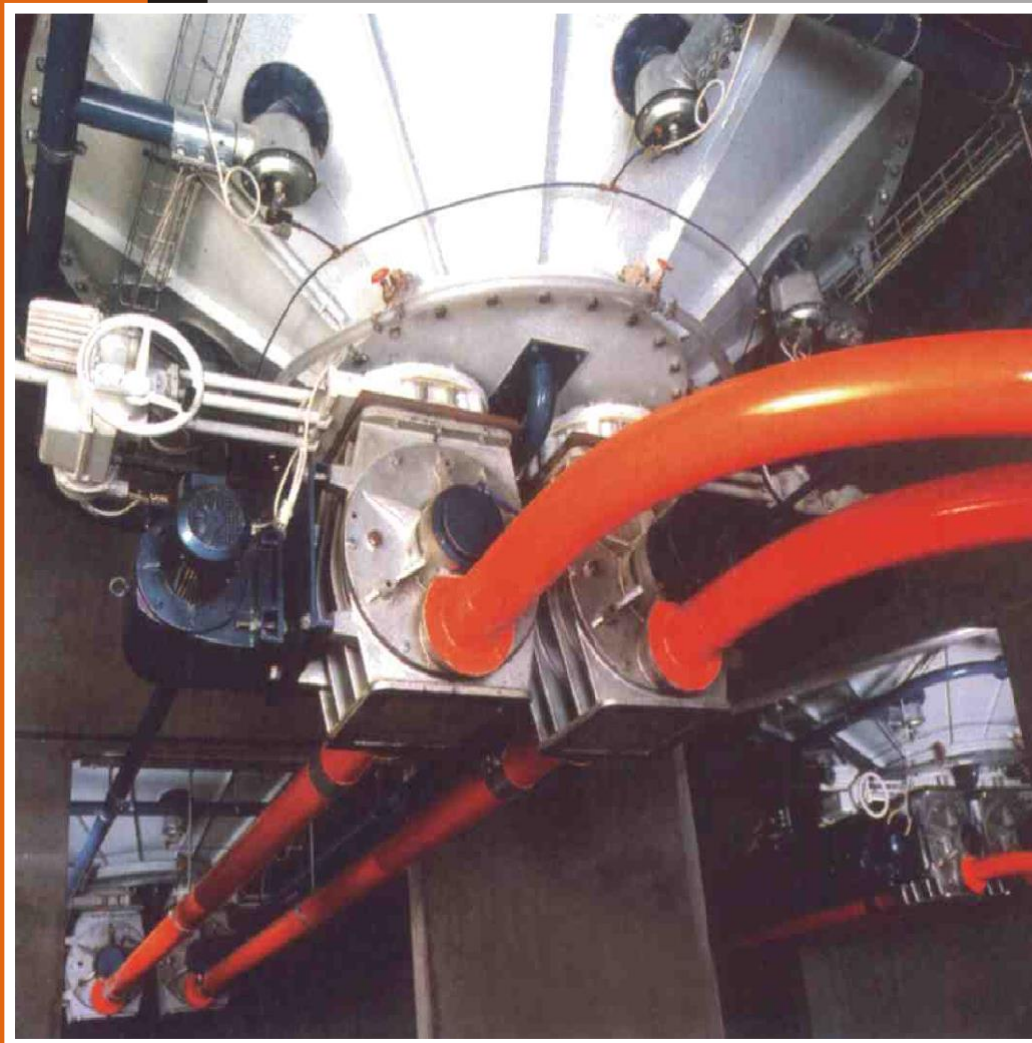


PNEUMATIC CONVEYING

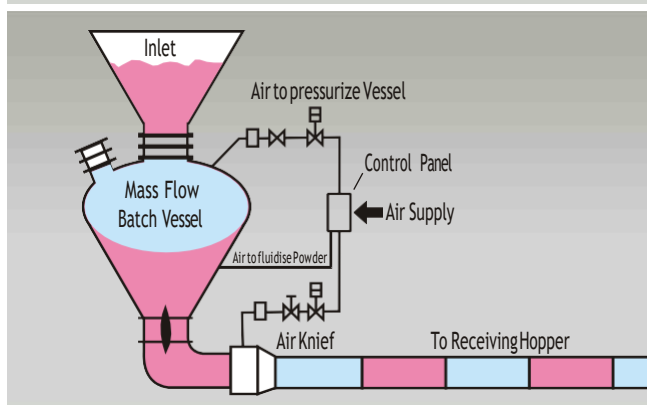
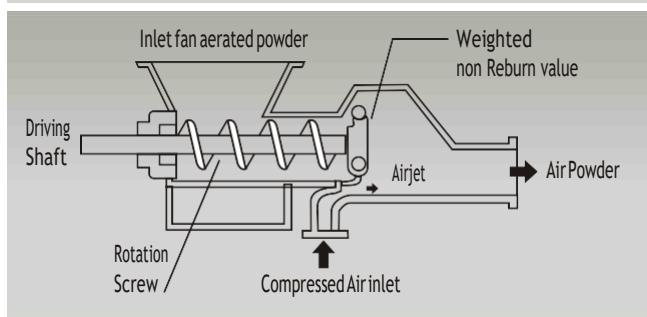
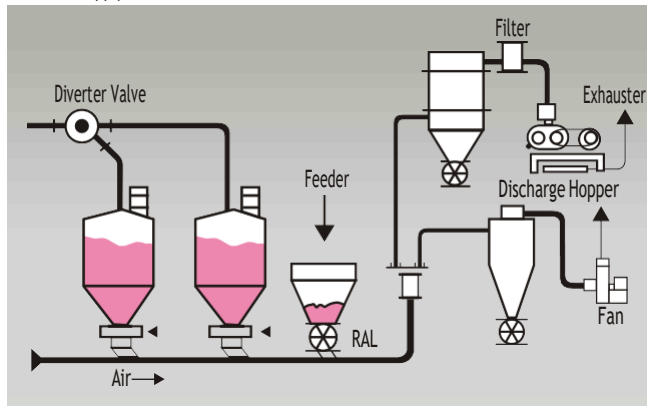
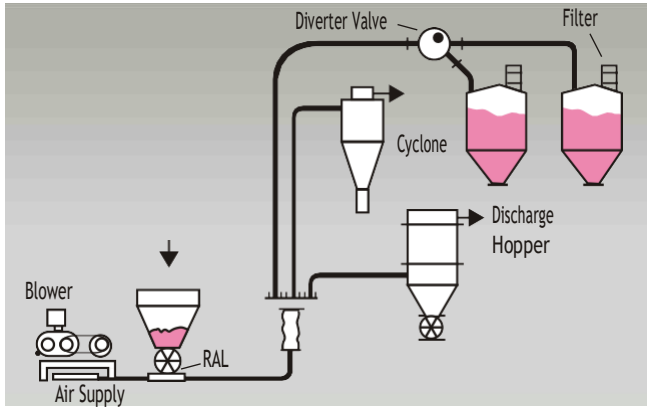
COMPLETE SOLUTION FOR PNEUMATIC CONVEYING.



Air Dynamics is having good experience & excellent track record in all types of solid, powder, lump, granules conveying i.e Pneumatic conveying system. All Pneumatic conveying systems are custom built, Air Dynamics design is Robust and giving max efficiency of all components used in conveying systems. In all Pneumatic Conveying systems there is a process through which both the product & the conveying gas must progress. In all system the process involves,

- ~ Feeding - Solids / Powder into the system
- ~ Mixing - Solids + Conveying air / gas combine
- ~ Conveying - Mixture is transported along the desired route
- ~ Separating - Solids are separated from conveying gas

There are three basic modes in which a product can be transported in air / gas stream.



I) LEAN PHASE CONVEYING SYSTEM:-

Lean Phase conveying system involves the transportation of small quantities of product in large volumes of conveying air / gas. The criterion is that all particles are suspended in the conveying air / gas stream.

There are mainly two types of lean phase conveying systems,

a) POSITIVE PRESSURE SYSTEM:- In this type product pick-up is from a single point & transport it to one or more points. Pressurised gas is used to convey the material to destination.

Advantages :-

- Single point Pick-up and multipoint delivery
- Suitable for all materials
- No material contamination
- Low air requirement
- Dust free operation

b) NEGATIVE PRESSURE SYSTEM (VACUUM CONVEYING):- In this type there are multiple pick-up points & transport it to a single point. In this system the material is conveyed in a vacuum created by a Exhauster located downstream to filter.

Advantages:-

- Multipoint pick-up and single point delivery
- Prevent material loss
- Feeding device is not required
- Better labour relations. No dust and pollution hazards since any dust formed is sucked in the system.
- Minimum particle degradation & breakage
- Reduce fire & explosion Hazards
- Facilitates direct bag unloading

These systems generally comprises of

- | | |
|-----------------------------------|--------------------------|
| a) Roots Blower / Centrifugal Fan | b) Rotary Air Lock Valve |
| c) Ventury | d) Cyclone Separator |
| e) Bag filter | f) Ducting |
| g) Diverter Valve | h) Dampers |

II) MEDIUM PHASE PNEUMATIC CONVEYING SYSTEMS:-

It operates at lower carrier gas velocities & correspondingly higher solid loadings. These systems are restricted to 'Fluidisable' materials in which the powder / air mixture behaves like a liquid.

III) DENSE PHASE PNEUMATIC CONVEYING SYSTEM:-

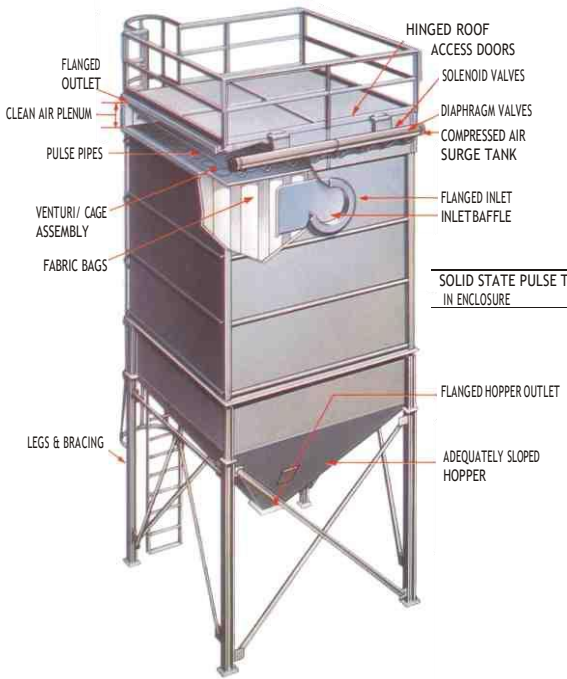
Dense phase conveying is characterized by low velocity with high mass ratio. These systems are suitable for handling almost all types of material from very fine powders to lumps up to 25 mm.

The material from the vessel is split up into plugs and fed into the conveying line at regular intervals. The conveying air keeps the material in fluidized state thus resulting into movement of plugs.

Advantages:-

- Batch weight up to 5 tons / cycle can be efficiently conveyed
- Can be used even with low pressure for friable & abrasive powders.
- Can convey high capacities over longer distances.
- Smaller pipes & Accessories
- Pollution Free Systems gives clean exhaust air.

Air dynamics supplies Fully automatic pneumatic conveying system operated by programmable logic control based control panel.



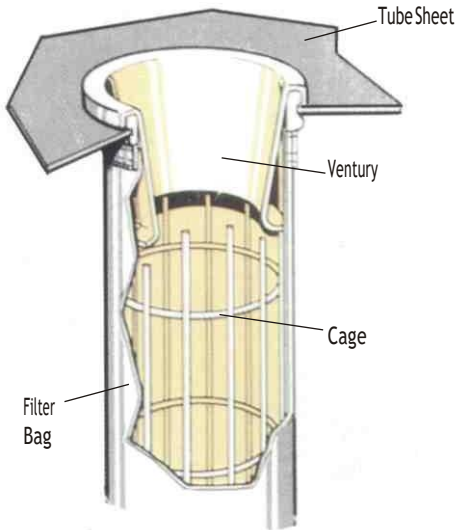
BAG FILTER: -

As a part of pollution control equipments Air Dynamics is manufacturing automatic Bag filters for collection of all kinds of dry dust. These filters are useful for various applications in various industries under widely varying conditions of gas volume, gas temperature & dust properties.

Air dynamics's Bag filter is a cost effective dust extraction system designed and engineered to meet the stringent laws of pollution control. We offer optimum efficiency in the dust extraction.

Salient Features: -

- Efficient Performance
- Advanced Features in design
- Construction in MS & SS
- Option of power saving by selecting fans with optimum power consumption
- Hardware & brought-out items like time pulse valve etc. are of most reputed make with manufacturer's performance warranty.



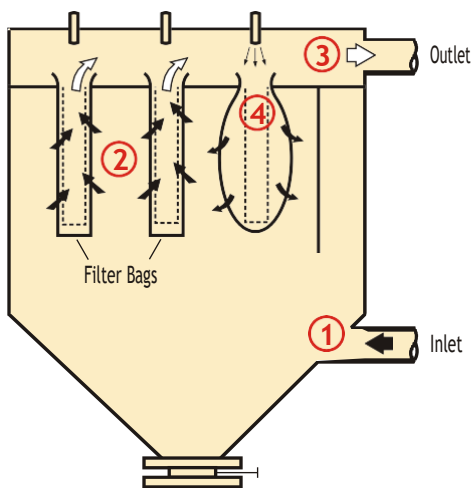
PULSE JET DUST COLLECTOR:-

Pulse jet dust collectors are most commonly used dust collector for the removal of dry particles from process, general ventilation air & for the recovery of product from many manufacturing processes.

Air Dynamics supplies pulse jet dust collectors for various industries such as cement, Iron & Steel, Chemical, food & Dairy etc.

Air Dynamics's various models provide continuous dust collection at 99+ % efficiency. These type of Dust collectors contains no. of bags covered on metallic cage. The bags are of PP, Polyester, Aramid (Normax), PPS (Ryton), PTFE, Homopolymer Acrylic, P84, Fibre Glass, etc. which gives max. Filtering efficiency.

Cage, Ventury & bag assembly with main casing is easy.



Principle Of Operation:-

- 1) Dust-laden air is drawn into the inlet & against the inlet baffle allowing the heavier dust to fall directly into the hopper. The incoming air is distributed over a wide portion of the fabric surface.
- 2) The air is drawn through the fabric bags with the dust collecting on the outside of the bags. The collected dust forms a 'Cake', which enhances filtering efficiency.
- 3) Clean air flows through the bags & is discharged.
- 4) The filter bags are reconditioned with pulses of compressed air initiated by a solid-state electronic timer. This pulse of low volume, high-pressure air is directed from the surge tank through the pulse pipe located above the bag. As the burst of air passes through the venturi located at the top of the bag, it induces an additional large volume of clean air into the bag, expanding the fabric & breaking the dust filter cake loose. The dislodged dust falls to the hopper below it.



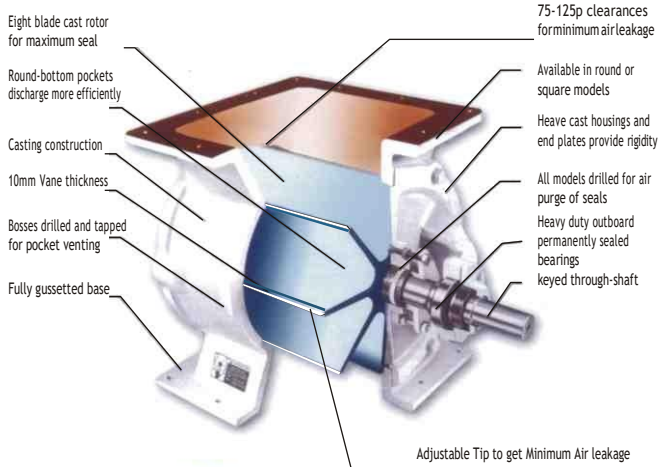
ROTARY AIR LOCK VALVE:-

Rotary Air Lock Valve is a high precision metering device. It is used to minimize the system losses, while transferring the material between the vessels with different pressure or a volumetric feeder for metering material at specified flow rates.

Rotary air lock valves are available in cast iron, cast steel, Aluminum, Heat resistant steel and other materials of construction from 100mm to 1000 mm size to meet capacities up to 500lit / rev.

These air lock valves are generally used to accomplish three basic tasks; to feed material from bin or hopper, to deliver fines from a collector, while sealing against air loss & to fed material into a pneumatic conveying system against pressure.

Our rotary air lock valves builds a heavier air locks to closer tolerances which means better sealing properties.



The Salient Features:-

- Heavy cast housing and end plate design provides sturdy & rigid airlocks to overcome strain & distortion under heavy stress.
- Close tolerances for internal surface machining, thus ensuring effective sealing.
- All valves are provided with inspection doors, which is machined along with the housing. The wear blades can be adjusted without dismantling the rotor through the inspection opening.
- All range of rotary air lock valve for high pressure & high temperature are available.
- Sealed outboard bearing.
- Large fabricated airlocks are built for large lumps & high capacities for ship loading unloading or preheater applications.
- Rotary air lock valves are available with adjustable tips for abrasive powders.
- Special feeders / Airlock valves are available in special design.

Side entry Air locks:- Rotary air locks with side entry avoid shear or degradation of hard granular pelletised materials. The side entry air locks ensures lower pocket fillage & spread the product across the rotor. Thus it will avoid the damage of the material.

Drop Through / Blow through Air locks:- These airlocks are commonly used in most applications for handling free flowing & non abrasive materials like Raw mill, Cement, Limestone powder and fine dust below ESP. these air locks are robustly built with all the features required for low maintenance service in the most demanding industrial material handling operations. Available in no. of sizes in round/ square flange design. Heavy-duty airlock with wear resistant liners is available for abrasive dusty conditions.

Large Fabricated Air locks:- These air locks are built for large lumps and high capacities for ship loading / unloading and for preheater applications. These large airlocks are shop fabricated from heavy gauge mild steel plates or any special materials and stress relieved for structural stability/rigidity during manufacturing as well as operation.

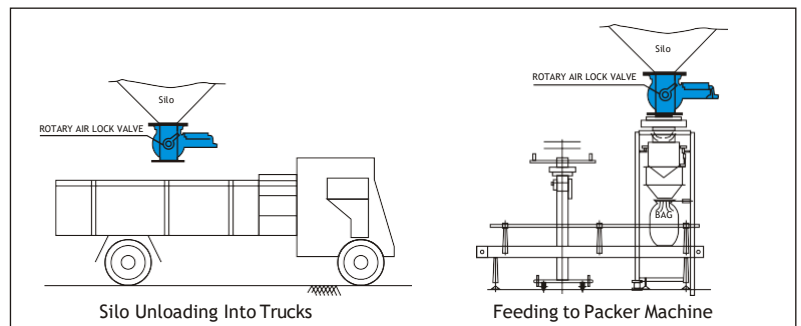
Dust cyclone : -



In dust cyclone separator the principle of centrifugal action is used to separate particulates from the gas stream. Dustladen gases are given a swirl by means of a tangential inlet & centrifugal force resulting thereby throws the particles on the walls of the cyclone. The dust thus separated is then collected in hopper.

Various factors like particle size, density, dia. of cyclone & velocity of the gases at the inlet of the cyclone governs the performance of the equipment.

These cyclones are suitable for high temperature and high volume dust.



Range of Rotary Air Lock Valve:-

Model	Size	Revolution RPM	Type	MOC
AD/RAL4	4"	10 - 30	Drop Through Blow through	CI/MS/SS
AD/RAL6	6"	8 - 25	Drop Through Blow through	CI/MS/SS
AD/RAL8	8"	8 - 20	Drop Through Blow through	CI/MS/SS
AD/RAL10	10"	8 - 20	Drop Through Blow through	CI/MS/SS
AD/RAL12	12"	8 - 18	Drop Through Blow through	CI/MS/SS
AD/RAL14	14"	6 - 16	Drop Through Blow through	CI/MS/SS

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* Our company policy is one of continuous improvement, equipment supplied may differ in detail from the illustrations and dimensions of this brochure. (Specifications subject to change without notice)

